

What is claimed is:

1. An interconnect system, comprising:

a first interposer housing including a first plurality of shielding members providing shielding for the thickness of said first interposer;

a second interposer housing including a second plurality of shielding members providing shielding for the thickness of said second interposer;

at least one cable having a central conductor, a conductive outer jacket, and a dielectric separating said central conductor and said conductive outer jacket, said outer jacket in electrical contact with at least some of said plurality of shielding members in said first interposer housing and said second interposer housing;

a cable housing connected to said first interposer and to said interposer for retaining said at least one cable;

said at least one cable having exposed portions extending beyond said cable housing into said first interposer and said second interposer, respectively;

at least one conductive element in contact with a central conductor of said at least one cable.

2. The interconnect system of claim 1, wherein said first interposer housing can be brought into contact with a printed circuit board having a conductive pattern and a plurality of holes each having a conductive pad therein such that said plurality of shielding members in said first interposer are in electrical contact with said pattern.

3. The interconnect system of claim 2, wherein said plurality of shielding members each for surrounding a central conductor is in electrical contact with a corresponding one of said conductive pads.

Sub.  
A15

10036796.010702

4. The interconnect system of claim 1, wherein said shielding members are fuzz buttons.

5. The interconnect system of claim 1, wherein said cable housing is molded over said at least one cable.

6. The interconnect system of claim 1, wherein said at least one conductive element is a conductive spring.

7. The interconnect system of claim 1, wherein said at least one conductive element is a fuzz button.

8. The interconnect system of claim 1, wherein said first plurality and said second plurality of shielding members provide 360° shielding.

9. The interconnect system of claim 1, wherein said at least one cable is a twinax cable.

10. The interconnect system of claim 1, wherein said at least one conductive element has approximately the same diameter as said at least one central conductor.

11. The interconnect system of claim 1, wherein said at least one conductive element is positioned between said exposed portions and a conductive pad on a printed circuit board such that the conductive element is compressed and retains approximately the same inductance as said central conductor.

12. An electrical connector comprising:

Sub  
A14

Sub  
A17

10036796-010702

Sub  
A18

Sub. A-18  
Concluded

a central cable surrounded by a dielectric layer and an electrically conductive jacket, said central cable having exposed opposite ends;

a first plurality of shielding members in electrical contact with one end of said electrically conductive jacket;

a second plurality of shielding members in electrical contact with an opposite end of said electrically conductive jacket;

a first conductive element in contact with one of said exposed opposite ends of said central cable; and

a second conductive element in contact with an opposite exposed end of said central cable.

13. The electrical connector of claim 12, wherein said first and second conductive elements are fuzz buttons.

14. The electrical connector of claim 12, wherein said electrical connector has an impedance of approximately 100 ohms.

15. The electrical connector of claim 12, wherein electrically conductive jacket is a braided jacket.

16. The electrical connector of claim 12, wherein said electrical connector is a 90° connector.

Sub. A-19

17. The electrical connector of claim 12, wherein said shielding members are conductive springs.

18. The electrical connector of claim 12, wherein said shielding members are fuzz buttons.

10036796-010702

19. The electrical connector of claim 12, wherein said central cable, said dielectric layer and said electrically conductive jacket from a coax cable.

Sub.  
A20

20. The electrical connector of claim 12, wherein said conductive spring and said central cable have approximately equal diameters.

21. The electrical connector of claim 12, wherein said second plurality of shielding members provide 360° shielding of said central cable.

22. The electrical connector of claim 12, wherein said second plurality of shielding members provide less than 360° shielding of said central cable.

10036796.010702

Sub.  
A21

23. A twinax electrical connector, comprising:

a twinax cable having two electrical conductors spaced from each other and having a dielectric surrounding said two electrical conductors and an electrically conductive layer surrounding said dielectric, said two electrical conductors each having exposed opposite ends;

a first plurality of shielding members in electrical contact with one end of said electrically conductive jacket;

a second plurality of shielding members in electrical contact with an opposite end of said electrically conductive jacket;

a first set of conductive elements each in contact with a corresponding one exposed end of said two electrical conductors; and

a second set of conductive elements each in contact with a corresponding second exposed end of said two electrical conductors.

24. The twinax electrical connector of claim 23, wherein said twinax connector carries signals having data speeds exceeding 5 Gb/sec.

25. The twinax electrical connector of claim 23, wherein the twinax cable has an elliptical cross-section.

26. The twinax electrical connector of claim 23, wherein said exposed opposite ends of said twinax cable extend into said first and said second interposers, respectively.

27. The twinax electrical connector of claim 23, further comprising:  
 a first interposer housing for receiving a portion of said first plurality of shielding members;  
 a second interposer housing for receiving a portion of said second plurality of shielding members;  
 a first retaining sheet for retaining said first plurality of shielding members and said first conductive elements;  
 a second retaining sheet for retaining said second plurality of shielding members and said second conductive elements;  
 a first movable interposer slide for receiving another portion of said first plurality of shielding members;  
 a second movable interposer slide for receiving another portion of said second plurality of shielding members.

28. The twinax electrical connector of claim 23, wherein said shielding members are fuzz buttons.

29. The twinax electrical connector of claim 23, further comprising a cable housing for housing said twinax cable.

30. The twinax electrical connector of claim 23, wherein said conductive elements are conductive springs.

10036796-010702

Sub  
A23

Sub. A23 included

31. The twinax electrical connector of claim 23, wherein said at least one conductive element is positioned between said exposed end and a conductive pad on a printed circuit board such that the conductive element is compressed and retains approximately the same inductance as said two electrical conductors.

32. The twinax electrical connector of claim 23, wherein said electrical connector has an impedance of approximately 100 ohms.

33. The twinax electrical connector of claim 23, wherein said second plurality of shielding members provide 360° shielding of said central cable.

34. The twinax electrical connector of claim 23, wherein said second plurality of shielding members provide less than 360° shielding of said central cable.

10036796-010702

73 measuring  
329

35. A method of transmitting a differential signal using an electrically shielded twinax cable, comprising:

carrying a first signal and a second signal each on a separate conductor of the twinax cable and shielding the separate conductors from adjacent conductors without shielding the separate conductors from each other and measuring the difference at a receiver between the first and second signal to arrive at an actual signal pulse.

439/

36. A latching mechanism for a compression mount connector, said compression mount connector mountable to a printed circuit board, comprising:

a guide pin mounted to the printed circuit board, said guide pin having a groove thereabout;

a guide block having a biased latching device for engaging said groove when said guide pin groove is brought into engagement therewith;

the electrical connector having contacts which exert a force in a direction away from the electrical connector being in a mated condition with contacts on the circuit board and the latching mechanism capable of resisting the force such that the contacts in the electrical connector remain in contact with the contacts on the circuit board.

37. An electrical connector having a plurality of twinax cables arranged in a vertical and horizontal array, comprising:

a first set of twinax cables arranged in a vertical array and spaced from each other; each twinax cable having a pair of conductors, a dielectric layer and an electrically conductive jacket;

a second set of twinax cables arranged in a vertical array and spaced from each other and horizontally spaced from said first set of twinax cables;

a first plurality of conductive elements each positioned against a corresponding conductor;

a second plurality of conductive elements each positioned against a corresponding conductor;

a cable housing for retaining said first set and said second set of twinax cables;

a first interposer on one side of said cable housing for receiving one end of said first set and said second set of twinax cables;

a second interposer on another side of said cable housing for receiving an opposite end of said first set and said second set of twinax cables;

a first retaining sheet for retaining signal spring contacts in contact with each pair of conductors on said one end of said first and second set of twinax cables;

10036796-010702

Sub  
A:4

a second retaining sheet for retaining signal spring contacts in contact with each pair of conductors on said opposite end of said first and second set of twinax cables;

a first interposer slide biased in a direction away from said first interposer and receiving an opposite end of said signal conductors and having a retracted position and a normal extended position;

a second interposer slide biased in a direction away from said second interposer and receiving an opposite end of said signal conductors and having a retracted position and an extended position;

wherein said conductive elements retained by said first retaining sheet and said second retaining sheet are protected by said first interposer slide and said second interposer slide, respectively, when each is in said retracted position and wherein said first plurality and said second plurality of conductive elements extend beyond said first interposer slide and said second interposer slide respectively when each is in said normal extended position.

38. The electrical connector of claim 37, wherein the first plurality and the second plurality of conductive elements are fuzz buttons.

39. The electrical connector of claim 37, wherein said electrical connector carries signals having data speeds exceeding 5 Gb/sec.

40. The electrical connector of claim 37, wherein the twinax cable has an elliptical cross-section.

41. The electrical connector of claim 37, wherein said shielding members are fuzz buttons.

Sub.  
A24  
Concluded

10036796-010702

Sub.  
A25



42. The electrical connector of claim 37, further comprising a cable housing for housing said twinax cable.

43. The electrical connector of claim 37, wherein said electrical connector has an impedance of approximately 100 ohms.

44. The electrical connector of claim 37, wherein said second plurality of shielding members provide 360° shielding of said central cable.

45. The electrical connector of claim 37, wherein said second plurality of shielding members provide less than 360° shielding of said central cable.

46. An electrical interconnect system, comprising:

- at least one cable having at least one central conductor and a conductive outer jacket with an insulator therebetween;
- a set of cable housings retaining said at least one cable;
- a first interposer cable housing having a first plurality of through holes corresponding to said at least one central conductor and a second plurality of holes partially overlapped in a radial direction with a respective one of said conductive outer jackets;
- a second interposer cable housing having a third plurality of through holes corresponding to said at least one central conductor and a fourth plurality of holes partially overlapped in a radial direction with a respective one of said conductive outer jackets;
- a first plurality of electrically conductive elements for insertion into said first plurality of through holes in said first interposer;
- a second plurality of electrically conductive elements for insertion into said second plurality of holes in said first interposer;

10036796-010702

Sub.  
Add

Sub. A26 Concluded

a first interposer slide including a first interposer cable housing having a first plurality of through holes corresponding to said at least one central conductor and a second plurality of holes partially overlapped in a radial direction with a respective one of said conductive outer jackets;

a first retainer positioned between said first interposer cable housing and said first interposer slide for retaining said first plurality of electrically conductive elements and said second plurality of electrically conductive elements;

a second interposer cable housing having a third plurality of through holes corresponding to said at least one central conductor and a fourth plurality of holes partially overlapped in a radial direction with a respective one of said conductive outer jackets;

a third plurality of electrically conductive elements for insertion into said third plurality of through holes in said second interposer;

a fourth plurality of electrically conductive elements for insertion into said fourth plurality of holes in said second interposer;

a second interposer slide including a third interposer cable housing having a third plurality of through holes corresponding to said at least one central conductor and a fourth plurality of holes partially overlapped in a radial direction with a respective one of said conductive outer jackets;

a second retainer positioned between said second interposer cable housing and said second interposer slide for retaining said third plurality of electrically conductive elements and said fourth plurality of electrically conductive elements.

47. The electrical interconnect of claim 46, wherein first plurality and the second plurality of conductive elements are fuzz buttons.

48. A latching mechanism for a compression mount type connector, comprising:

a garter spring retained in the compression mount type connector;

10036796-010702

a guide pin extending from a circuit board and having an annular inwardly extending groove for receiving an inner diameter of said garter spring.

49. A compression mount electrical connector for mounting to a printed circuit board having a guide pin, comprising:

a housing including a plurality of signal paths;

a latching mechanism including a latching device in the housing for latching onto the guide pin.

50. A twinax electrical connector including a latching device, comprising:

a twinax cable having two electrical conductors spaced from each other and having a dielectric surrounding said two electrical conductors and an electrically conductive layer surrounding said dielectric, said two electrical conductors each having exposed opposite ends;

a first plurality of shielding members in electrical contact with one end of said electrically conductive jacket;

a second plurality of shielding members in electrical contact with an opposite end of said electrically conductive jacket;

a first set of conductive elements each in contact with a corresponding one exposed end of said two electrical conductors;

a second set of conductive elements each in contact with a corresponding second exposed end of said two electrical conductors; and

a latching mechanism including a latching device in the housing for latching onto the guide pin.

51. The twinax electrical connector of claim 50, wherein the first plurality and the second plurality of conductive elements are fuzz buttons.

30036796 "010702  
 3/16/02  
 3/16/02

52. An electrical connector having a plurality of twinax cables arranged in a vertical and horizontal array and having a latching mechanism, comprising:

a first set of twinax cables arranged in a vertical array and spaced from each other; each twinax cable having a pair of conductors, a dielectric layer and an electrically conductive jacket;

a second set of twinax cables arranged in a vertical array and spaced from each other and horizontally spaced from said first set of twinax cables;

a first plurality of conductive elements each positioned against a corresponding conductor;

a second plurality of conductive elements each positioned against a corresponding conductor;

a cable housing for retaining said first set and said second set of twinax cables;

a first interposer on one side of said cable housing for receiving one end of said first set and said second set of twinax cables;

a second interposer on another side of said cable housing for receiving an opposite end of said first set and said second set of twinax cables;

a first retaining sheet for retaining signal spring contacts in contact with each pair of conductors on said one end of said first and second set of twinax cables;

a second retaining sheet for retaining signal spring contacts in contact with each pair of conductors on said opposite end of said first and second set of twinax cables;

a first interposer slide biased in a direction away from said first interposer and receiving an opposite end of said signal conductors and having a retracted position and a normal extended position;

Sub.  
227  
Cont.

10036796-010702

Sub. A27  
Concluded

a second interposer slide biased in a direction away from said second interposer and receiving an opposite end of said signal conductors and having a retracted position and an extended position;

wherein said conductive elements retained by said first retaining sheet and said second retaining sheet are protected by said first interposer slide and said second interposer slide, respectively when each is in said retracted position and wherein said first plurality and said second plurality of conductive elements extend beyond said first interposer slide and said second interposer slide respectively when each is in said normal extended position;

a latching mechanism including a latching device in the housing for latching onto the guide pin.

10036796.010702